areas being frequently denominated “holes.” In general, how­ever, the term prairie is used to designate tracts of land nearly or quite destitute of forests, or over which the trees are, as a general rule, limited to the “bluffs ”—the more or less precipitous slopes which separate the upland, or prairie proper, from the river bottom —which treeless areas occur in the midst of a well-forested country. Illinois is *par excellence* the Prairie State, and may be considered the centre of the prairie region, the adjacent States, on all sides, having more or less prairie and also areas of dense forest.

All through the prairie region the precipitation is abundant and pretty equally distributed through the year. The vicinity of Chicago, a typical prairie region, comes within the isohyetal of 44 inches and upwards, and the same is true of a part of the treeless region of Iowa. Large areas in the more southern States— Arkansas, Alabama, Mississippi, and Louisiana—are also prairies, portions of which are entirely destitute of forests, while others have small “clumps ” of trees sparsely scattered over their surface. This is in a region of the largest rainfall, that of 56 inches and upwards. The cause of the absence of trees on the prairies is the physical character of the soil, and especially its exceeding fineness, which is prejudicial to the growth of anything but a superficial vegetation, the smallness of the particles of soil being an insuper­able barrier to the necessary access of air to the roots of a deeply- rooted vegetation. Wherever in the midst of the extraordinarily fine soil of the prairies coarse or gravelly patches exist, there dense forests occur. The theory that fineness of soil is fatal to tree growth finds its most remarkable support in the fact that in south­eastern Russia the limits of the “ black earth ” and the treeless region are almost exactly identical, and not at all in harmony with the position of the isohyetal lines. The black soil of Russia is an earth of exceeding fineness—so fine indeed that it is with the greatest difficulty that the air can penetrate it so as to oxidize the organic matter which it contains, —the essential cause (in the opinion of the present writer) of its dark colour. The peculiar mode of decay of the organic matter in such fine soils seems analogous to that by which vegetation has been turned into coal or lignite when so buried under detrital material as to greatly impede the access of the air. It is now easy to see why plains are likelier than mountain slopes to be treeless, it being towards the plains that the finer particles of the material which is abraded from the higher regions are being constantly carried. The more distant the region from the mountains and the broader its area the more likely it is that a considerable portion of it will be covered with fine detritus, whether this be of subaerial origin or deposited at the bottom of the sea. The exceedingly fine soil of the typical prairie region consists, in large part, of the residual material left after the removal, by percolation of the rain and other atmospheric agencies, of the calcareous portion of the undisturbed stratified deposits, chiefly of Palæozoic age, which underlie so large a portion of the Mississippi valley. The finer portions of the formations of more recent age in the Gulf States have also, over considerable areas, remained treeless. There are in various parts of the country beds of lakes which have disappeared in consequence of their very slow filling up with fine sediment, and these are not occupied by the forest, although surrounded by the densest arboreal growth.

The principal use of the forests of the United States is for fuel ; and there is no part of the settled portion of the country where the consumption for this purpose is not of some importance. In the middle and northern Atlantic States coal is the chief fuel in the cities and large towns, and the almost exclusive fuel of the larger cities on important lines of communication, but supple­mented, to a greater or less extent, by wood. But in the country, on the farms, and in the small towns wood is almost exclusively used, except on the coal-fields or in their immediate vicinity. In the coal - producing States of Illinois and Iowa, where forests are limited to certain areas, and in Nebraska and Kansas, which have coal of inferior quality and where forests are still scarcer than they are in Illinois and Iowa, coal is the dominating fuel. The same is the case in certain parts of Missouri. In all the States south of Virginia and Kentucky wood is almost the exclusive fuel, except in a few of the very largest towns. Wood is also almost exclusively the material of which houses and barns are built over the whole United States, the exceptions being the larger cities (chiefly of brick, with some stone), the business portions of the towns of second rank, and occasional important buildings in towns of the third rank. The other uses of wood are obvious. The following figures given by the census of 1880 relate to the manufacture of sawn lumber:—establishments, 25,708; capital, $181,186,122; average hands employed, 147,956; feet of lumber produced, 18,091,356,000 ; laths, 1,761,788,000 ; shingles, 5,555,046,000; staves, 1,248,226,000; sets headings, 146,523,000; feet of bobbin and spool stock, 34,076,000 ; total value of specified products, $230,685,061 ; value of other products, $2,682,668 ; total value, $233,367,729. The consumption of wood for domestic fuel is given in 1880 as amounting to 140,537,439 cords, with an estimated value of $306,950,040, and the total consumption of wood as fuel as 145,778,137 cords, valued at $321,962,373.

Mineral Resources.

In 1619 the erection of “works” for smelting the ores of iron was begun at Falling Creek, near Jamestown, Va., and iron appears to have been made in 1620 ; but the enterprise was stopped by a general massacre of the settlers in that region. In 1643 the busi­ness of smelting and manufacturing iron was again begun at Lynn, Mass., where it was successfully carried on, at least up to 1671, furnishing most of the iron used in the colony. From the middle of the 17th century the smelting of this metal began to be of im­portance in the vicinity of Massachusetts Bay, and by the close of the century there had been a large number of iron-works established in that colony, which, for a century after its settlement, was the chief seat of the iron manufacture in America, the bog ores, taken from the bottoms of the ponds, being chiefly employed. Early in the 18th century the industry began to extend itself over New England, and into New York and New Jersey, the German bloom- ery or forge being employed for reducing the ore directly to bar iron, and by the middle of that century it had taken a pretty firm hold in the Atlantic States. About 1789 there were fourteen fur­naces and thirty-four forges in operation in Pennsylvania. Before the separation of the colonies from the mother country took place the manufacture of iron had been extended through all of them, with the possible exception of Georgia. As early as 1718 iron (both pig and bar) began to be sent to Great Britain, the only country to which the export was permitted, the annual amount between 1730 and 1775 varying ordinarily between 2000 and 3000 tons, but in one year (1771) rising to between 7000 and 8000 tons.@@1

So far as known, the first metal, other than iron, mined by the whites within the territory of the United States was copper.@@2 The first company began work about 1709, at Simsbury, Conn. The ore obtained there and in New Jersey seems to have been mostly shipped to England. A few years later attempts were made to work mines of lead and cobalt in Connecticut and Massachusetts, but none of these enterprises seem to have been conducted with much vigour or to have met with any success. The first metal, other than iron, mined and smelted on any scale of importance was lead. The ore of this metal—galena—occurring in considerable quantity, and in many localities, on or near the Mississippi, and being easily smelted by the roughest possible methods, was made use of at an early date. While this region—then called Louisiana —was in possession of the Spanish, some mines were opened and worked, although in a very rude manner, the ore being taken out from mere pits and smelted on log-heaps. In 1774 Julien Dubuque began operations in the region of the upper Mississippi, at the place where is now the flourishing city which bears his name ; but no real development of the mining interest took place in that region until half a century later.

The first mining excitement of the United States dates back to the discovery of gold by the whites in the southern States, along the eastern border of the Appalachian range, in Virginia, and in North and South Carolina. The existence of gold in that region had been long known to the aboriginal inhabitants, but no atten­tion was paid to this by the whites, until about the beginning of the present century, when nuggets were found, one of which weighed 28 lb. From 1824 the search for gold continued, and by 1829 the business had become important, and was attended with no little excitement. In 1833 and 1834 the amount annually obtained had risen to fully a million of dollars. A rapid develop­ment of the lead mines of the West, both in Missouri and on the upper Mississippi in the region where Iowa, Wisconsin, and Illinois adjoin one another, took place during the first quarter of the present century and as early as 1826 or 1827 the amount of this metal obtained had risen to nearly 10,000 tons a year. By this time the make of iron had also become important, the production for 1828 being estimated at 130,000 tons.

In 1820 the first cargo of anthracite coal was shipped to Phil­adelphia. From 1830 the increase in the production was very rapid, and in 1841 the annual shipments from the Pennsylvania anthracite region had nearly reached 1,000,000 tons, the output of iron at that time being estimated at about 300,000 tons. The develop­ment of the coal and iron interests, and the increasing importance of the gold product of the Appalachian auriferous belt, and also of the lead product of the Mississippi valley, led to a more general and decided interest in geology and mining ; and about 1830 geo­logical surveys of several of the Atlantic States were begun, and more systematic explorations for the ores of the metals, as well as for coal, were carried on over all parts of the country then open to settlement. An important step was taken in 1844, when a cession of the region on the south shore of Lake Superior was obtained from the Chippeway Indians. Here explorations for copper im­mediately commenced, and for the first time in the United States the business of mining for the metals began to be developed on an extensive scale, with suitable appliances, and with financial success.

@@@1 Throughout this article, by “ ton is understood the ton of 2240 lb, unless the contrary is expressly stated.

@@@2 This metal had also been extensively mined in the Lake Superior region long before the first visit of the English.